

Masters Project Preparation

Assignment 3a and 3b

3A – INITIAL RESEARCH AND BIBLIOGRAPHY

*I am still not sure about the bibliography I would like use.

- Watts, Robert G. *Global Warming and the Future of the Earth*. San Rafael, Calif. (1537 Fourth Street, San Rafael, CA 94901 USA) : Morgan & Claypool Publishers, 2007. Electronic Book
- Zabeltitz, Christian, von. *Integrated Greenhouse Systems for Mild Climates: Climate Conditions, Design, Construction, Maintenance, Climate Control*. Berlin ; Springer, c2011. Electronic Book

3B – PRECEDENT STUDY

1. Millennium Seed Bank

- The largest seed bank of the world is an international conservation project and research center, a “living library” of over 3 billion seeds, which contains visitor center, as well as residential and educational science facilities.
- The seed bank was formed to prevent extinction of plant species by storing their seeds and using them in future. Millennium Seed Bank has a global importance; the groups of scientists are responsible for conserving seeds from the entire world - by 2020 the seed bank plans to have species of flora representing 25% of global plant types. They study genetic information of species, take care of their germination tests of every sample in every 10 years, reproduce seeds and send back to their native lands to restore the natural habitat.
The building is an interesting hybrid of public and private facilities: offices for scientists are mixed with public exhibition spaces, so that visitors could see how important plant studies are and be inspired by the research process. There are also completely isolated, underground zones with constant temperature and humidity level and the climate control is done very energy efficiently. I believe that studying that building will help me understand the process of plant conservation, spatial and technical needs and public involvement level for my project.
- Project Data:
Architect: Stanton Williams.
Client: The Royal Botanic Gardens Kew
Location: Wakehurst Place, West Sussex, England.
Status: Completed 2000
Value: £14.0 m
- Sources of Information:
 - Drori, Johnathan. *Why we're storing billions of seeds*. TED Talk. Web. Filmed Feb 2009. Posted May 2009.
<http://www.ted.com/talks/jonathan_drori_why_we_re_storing_billions_of_seeds.html?ga_source=embed&ga_medium=embed&ga_campaign=embed>
 - Kew Royal Botanic Gardens. *Introducing the Millennium Seed Partnership*. Web.
<<http://www.kew.org/science-conservation/save-seed-prosper/millennium-seed-bank/index.htm>>
 - Slageren, M. W. van. *Millennium Seed Bank Project, Royal Botanic Gardens, Kew, Seed Conservation Department, Wakehurst Place, Ardingly, Haywards Heath, West Sussex*

RH17 6TN, U.K. Journal of Arid Environments. Web. 2003.

<<http://www.cbd.int/doc/articles/2003/A-00155.pdf>>

- Staton Williams. *Millenium Seed Bank*. Web.
<<http://www.stantonwilliams.com/projects/millennium-seed-bank/>>
- Parker, Leslie. *Seed Seekers Bank on Success*. Australian Geographic. Web Journal. 5 Jul, 2010. < <http://www.australiangeographic.com.au/journal/the-seed-seekers.htm>>

2. Svalbard Global Seed Vault

- Svalbard Global Seed Vault is an underground “backup system” for the world agriculture located about 810 miles from the North Pole. The location allows scientists freeze seeds without mechanical assistance.

- Seed banks located around the world are vulnerable due to construction, economical, mechanical or political reasons. Scientists decided to find a safe place on the world, remote from political interests, where they could conserve and preserve different crops’ species without mechanical systems, so they chose Svalbard Island – the furthest undisturbed and uninhabited place which is still easy to reach by plane.

Although this precedent was built purely for ecological reasons and has no public functions, I chose Svalbard Seed Vault because it is interesting for its natural processes and global politics.

- Project Data:

Architect: Peter W.Søderman

Client: The Global Crop Diversity Trust (GCDT)

Location: Longyearbyen, Svalbard, Norway

Status: Completed 2009

- Sources of Information:

- Global Crop Diversity Trust. A Foundation for Food Security. *Structure*. Web.
<<http://www.croptrust.org/content/svalbard-global-seed-vault>>
- Fowler, Cary. *One Seed at a Time Protecting the Future of Food*. TED Talk. Web. Filmed Jul 2009. Posted Aug 2009.
<http://www.ted.com/talks/lang/en/cary_fowler_one_seed_at_a_time_protecting_the_future_of_food.html>
- Fowler, Cary. The Svalbard Global Seed Vault. Securing the Future of Agriculture. Global Crop Diversity Trust. Web. 23 Feb, 2008.
<<http://www.croptrust.org/documents/Svalbard%20opening/New%20EMBARGOED-Global%20Crop%20Diversity%20Trust%20Svalbard%20Paper.pdf>>
- Norway Ministry of Agriculture and Food. *Svalbard Global Seed Vault*. Web.
<<http://www.regjeringen.no/en/dep/lmd/campaign/svalbard-global-seed-vault.html?id=462220>>
- Norway Ministry of Agriculture and Food. *Welcome to the Seed Portal of the Svalbard Global Seed Vault*. Database.
<<http://www.nordgen.org/index.php/en/content/view/full/1400>>
- Roach, John. *"Doomsday" Vault Will End Crop Extinction, Expert Says*. National Geographic News. Web. 27 Dec, 2007.
<<http://news.nationalgeographic.com/news/2007/12/071227-seed-vault.html>>

3. Eden Project

- The largest plant enclosure, the Eden Project is a significant and innovative project for its structural solution, consisting of 8 inter-linked geodesic domes.

- The greenhouse, the shape of which is a beautiful biomimicry of inter-linked soap bubbles, is a home of thousands of species. Innovative use of thermoplastic ETFE allowed the engineers create biomes shaped with very light hexagonal panels, which can span much bigger than glass panels. I would like to research the project's mechanical and structural novelties and advanced technologies for the green house I plan to design for a prototype seed bank.
- Project Data:
 - Architect: Nicholas Grimshaw.
 - Engineer: Anthony Hunt and Associates
 - Project Manager: Davis Langdon
 - Constructor: Alfred McAlpine
 - Biome Design and Construction: MERO
 - Client: The Eden Project LTD
 - Location: Cornwall, England.
 - Status: Completed 2001
 - Area: 23,000 m²
 - Budget: £57-£75 m
- Sources of Information:
 - Grimshaw Architects. *The Eden Project*. Web. <<http://grimshaw-architects.com/project/the-eden-project/>>
 - Eden Project. Sustainability at Eden. Web <<http://www.edenproject.com/whats-it-all-about/climate-and-environment/sustainability-at-eden>>
 - Pawlyn, Michael. *Using Nature's Genius in Architecture*. TEDSalon London 2010. Web. Filmed Nov 2010. Posted Feb 2011. <http://www.ted.com/talks/lang/en/michael_pawlyn_using_nature_s_genius_in_architecture.html>
 - Pearman, Hugh, and Whalley, Andrew. *The Architecture of Eden*. Eden Books, Transworld. The University of California, 2003.

4. The Seed Cathedral

- UK pavilion at Shanghai Expo is a beautiful representation of British long traditions of botanical gardens.
- Significance of this project is in a different approach to plant presentation – in place of building a greenhouse, Heatherwick studio took seeds to define plants, to highlight how unique and beautiful the beginning of each plant can look like and turned seeds into the jewelry of the pavilion. I would like to research the pavilion as a successful and poetic example of plant exhibition.
- Project Data:
 - Architect: Heatherwick Studio
 - Client: Government of UK
 - Location: Shanghai, China
 - Status: Completed 2010
 - Area: 1500 m²
 - Budget: £25 m
- Sources of Information:
 - Daily Mail Reporter. *The £25 million giant pin cushion in China that's funded by British Taxpayers*. Mail Online. Updated 22 Feb 2010. <<http://www.dailymail.co.uk/news/article-1252695/A-hedgehog-run--bizarre-structure-built-China-moved-Victorian-times.html>>
 - Heatherwick, Thomas. *Building the Seed Cathedral*. TED2011. Web. Filmed Mar 2011. Posted May 2011. <http://www.ted.com/talks/thomas_heatherwick.html>

- Heatherwick Studios. UK Pavilion. Web. < <http://www.heatherwick.com/uk-pavilion/>>
- Jordana , Sebastian. *UK Pavilion for Shanghai World Expo 2010 / Heatherwick Studio*. 03 May 2010. ArchDaily. Accessed 15 Sep 2012. <<http://www.archdaily.com/58591>>
- Walsh, Bryan. *The Seed Cathedral*. 11 Nov, 2010. Time Specials. Web. <http://www.time.com/time/specials/packages/article/0,28804,2029497_2030629_2029796,00.html>

5. EDF Archives Center

- Simple and elegant archive building in France can store 70 kilometers of shelves for paper-based and microfilm-based archived material providing maximum fire protection and constant temperature and humidity.
- The reason why I got interested in the case is the storing strategies the architects chose – archives are composed by 20 similar storehouses on 5 floors; the design team worked on different floor heights to get the maximum out of the minimum amount of the built-up area. I would like to research how they hybridized storage spaces with offices, and study their plans and section drawings, as well as mechanical and fire protection systems.
- Project Data:
 - Architect: LAN Architecture
 - Client: EDF
 - Project Manager: Christophe Leblond
 - Location: Bure-Saurdon, France
 - Competition: 2008
 - Status: Completed 2011
 - Area: 6,800 m²
- Sources of Information:
 - LAN Architecture. *EDF Archives Center*. Press Release. Apr 2011 <http://www.lan-paris.com/media/projectFiles/LAN_BURE_EDF_DP%20EN.pdf>
 - Rosenberg , Andrew. *EDF Archives Centre / LAN Architecture*. 01 May 2011. ArchDaily. Accessed 15 Sep 2012. <<http://www.archdaily.com/131621>>